ENHANCED BLAST WEAPONS

PAIW 6
Out Brief

Questions

- Do EBWs make a difference in combat in a MOUT environment?

- What enhancements are needed to make the simulation better?

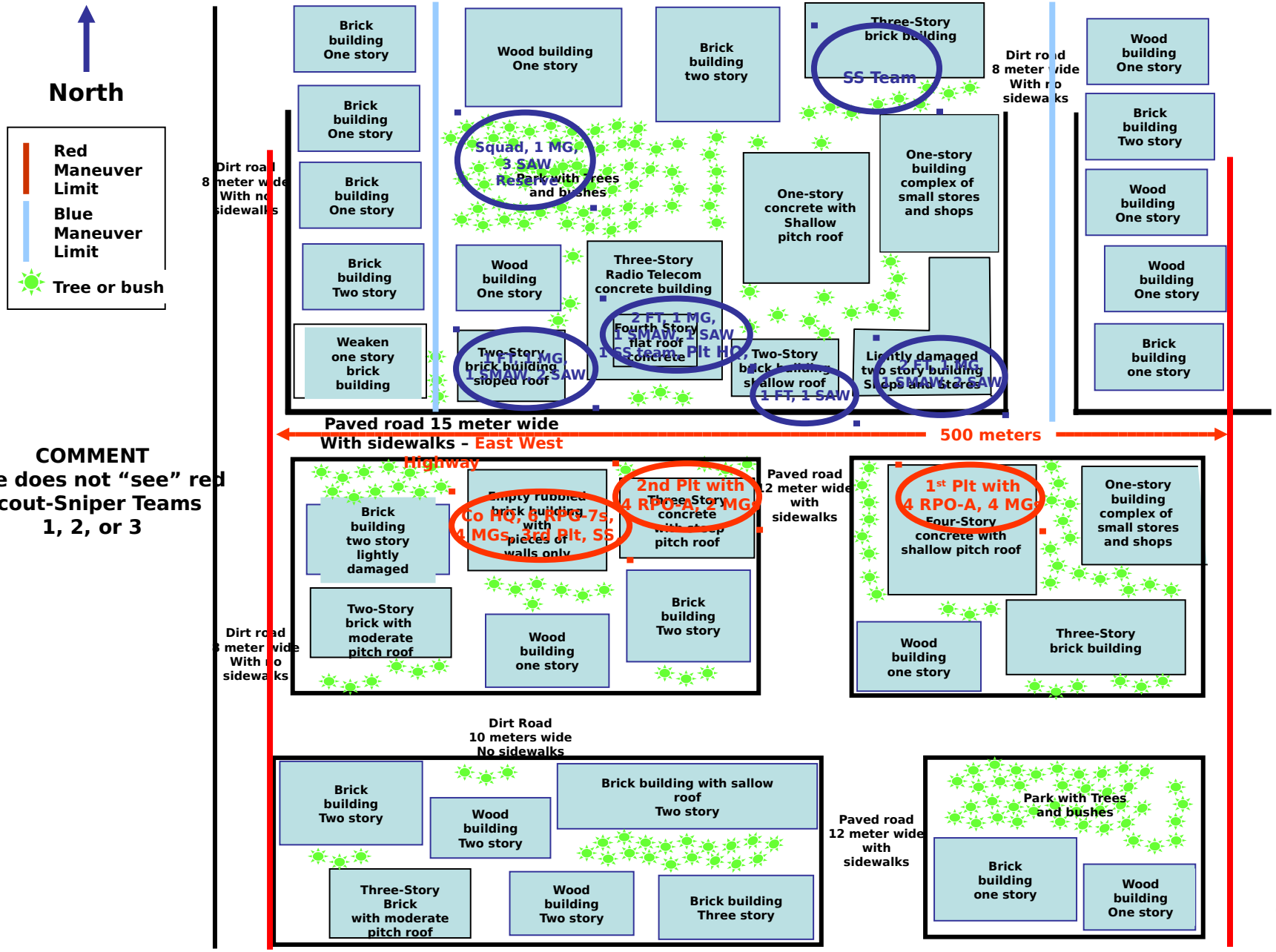
Item 1

How did we attack our question and what were the results?

Scenario

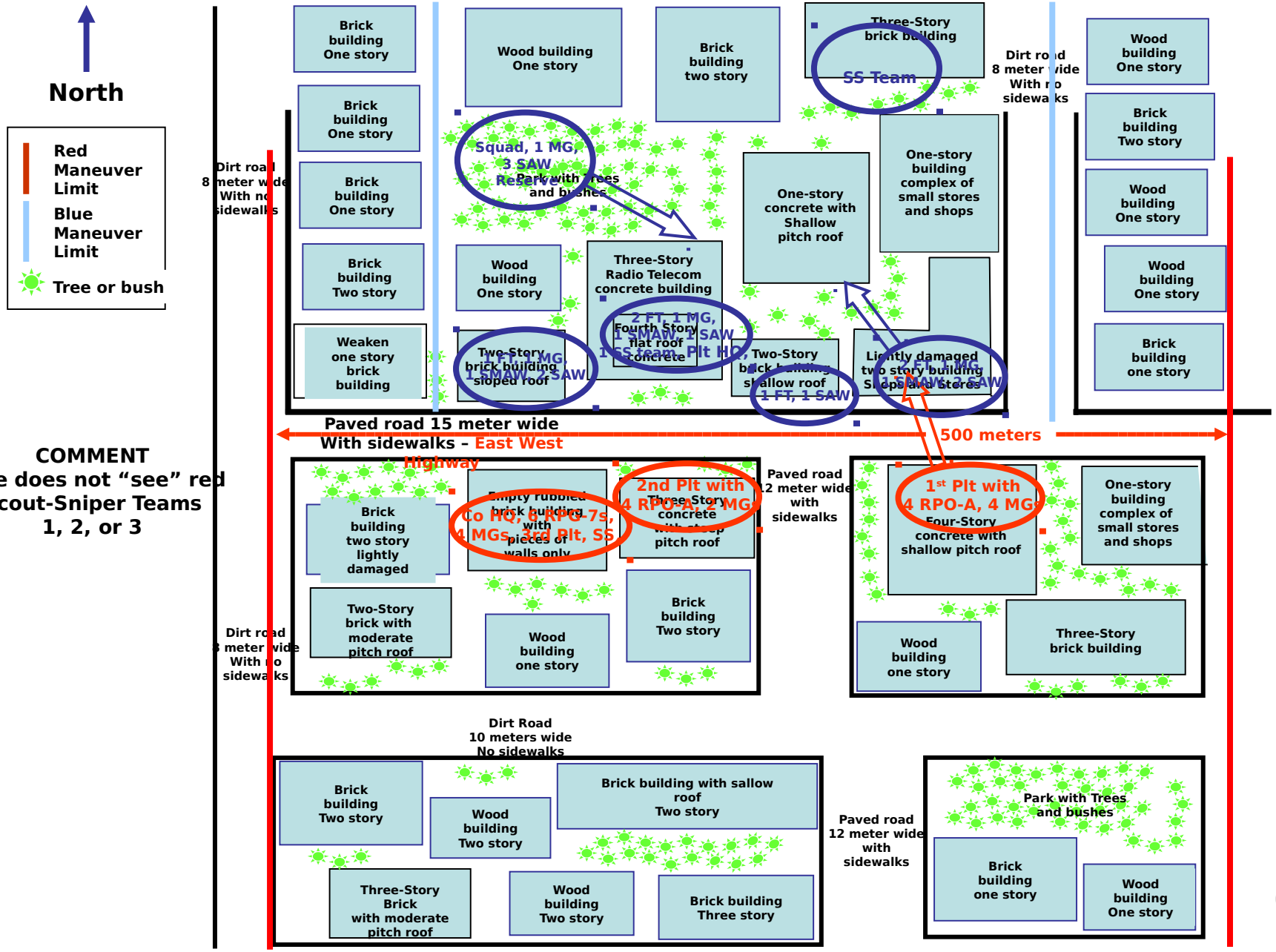
- Blue Platoon – Defense in urban terrain
- Red Company – Attack in urban terrain
- Base scenario with organic infantry wpns only
  (No EBWs)
- Follow-on scenarios add EBWs to:
  - Attackers (Russian RPO-A)
  - Defenders (U.S. SMAW-NE)
  - Both (As above)

Scenario

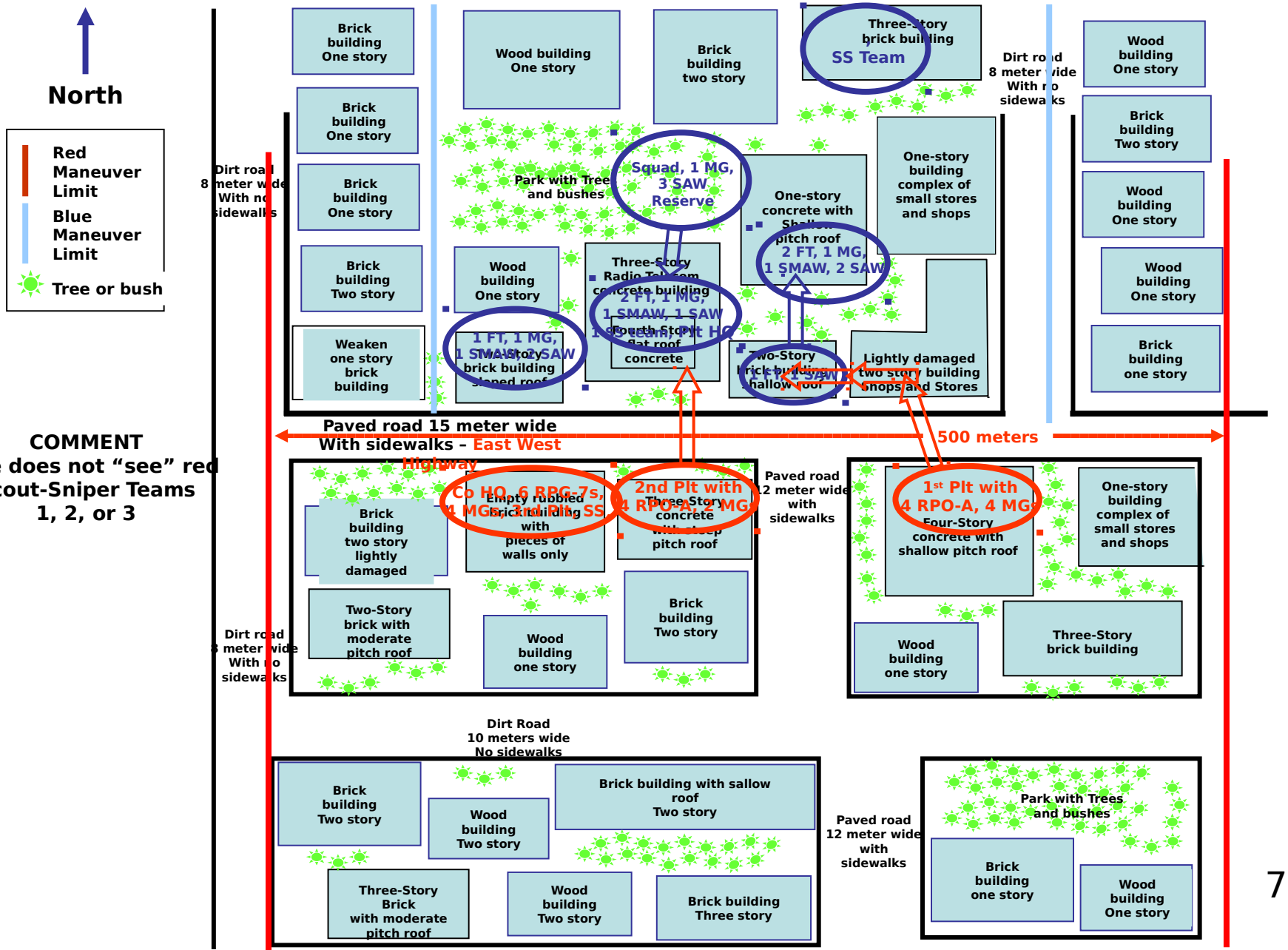

North
Red Maneuver Limit
Blue Maneuver Limit
Tree or bush
Brick building One story
Wood building One story
Brick building two story
Three-Story brick building
SS Team
Dirt road 8 meter wide With no sidewalks
Wood building One story
Brick building One story
Brick building One story
Squad, 1 MG, 3 SAW
Park with Trees and bushes
One-story concrete with Shallow pitch roof
One-story building complex of small stores and shops
Brick building Two story
Wood building One story
Brick building Two story
Wood building One story
Three-Story Radio Telecom concrete building
2 FT, 1 MG, 1 SAW, 1 SAW
Fourth Story flat roof concrete
Plt HQ
Weaken one story brick building
Two-Story brick building sloped roof
1 FT, 1 MG, 1 SAW, 2 SAW
Two-Story brick building shallow roof
1 FT, 1 SAW
Lightly damaged two story building Shops and stores
FT, MG, 1 SAW, 2 SAW
Wood building One story
Brick building one story
Paved road 15 meter wide
With sidewalks – East West Highway
500 meters
Brick building two story lightly damaged
Empty rubbled brick building with pieces of walls only
Co HQ, 3 RPG-7s, 4 MGs, 3rd Plt, SS
2nd Plt with 4 RPO-A, 2 MGs
Three-Story concrete with steep pitch roof
Paved road 12 meter wide with sidewalks
1st Plt with 4 RPO-A, 4 MGs
Four-Story concrete with shallow pitch roof
One-story building complex of small stores and shops
Two-Story brick with moderate pitch roof
Wood building one story
Brick building Two story
Wood building one story
Three-Story brick building
Dirt road 8 meter wide With no sidewalks
Dirt Road 10 meters wide No sidewalks
Brick building Two story
Wood building Two story
Brick building with sallow roof Two story
Three-Story Brick with moderate pitch roof
Wood building Two story
Brick building Three story
Paved road 12 meter wide with sidewalks
Park with Trees and bushes
Brick building one story
Wood building One story

COMMENT
Blue does not "see" red
Scout-Sniper Teams
1, 2, or 3

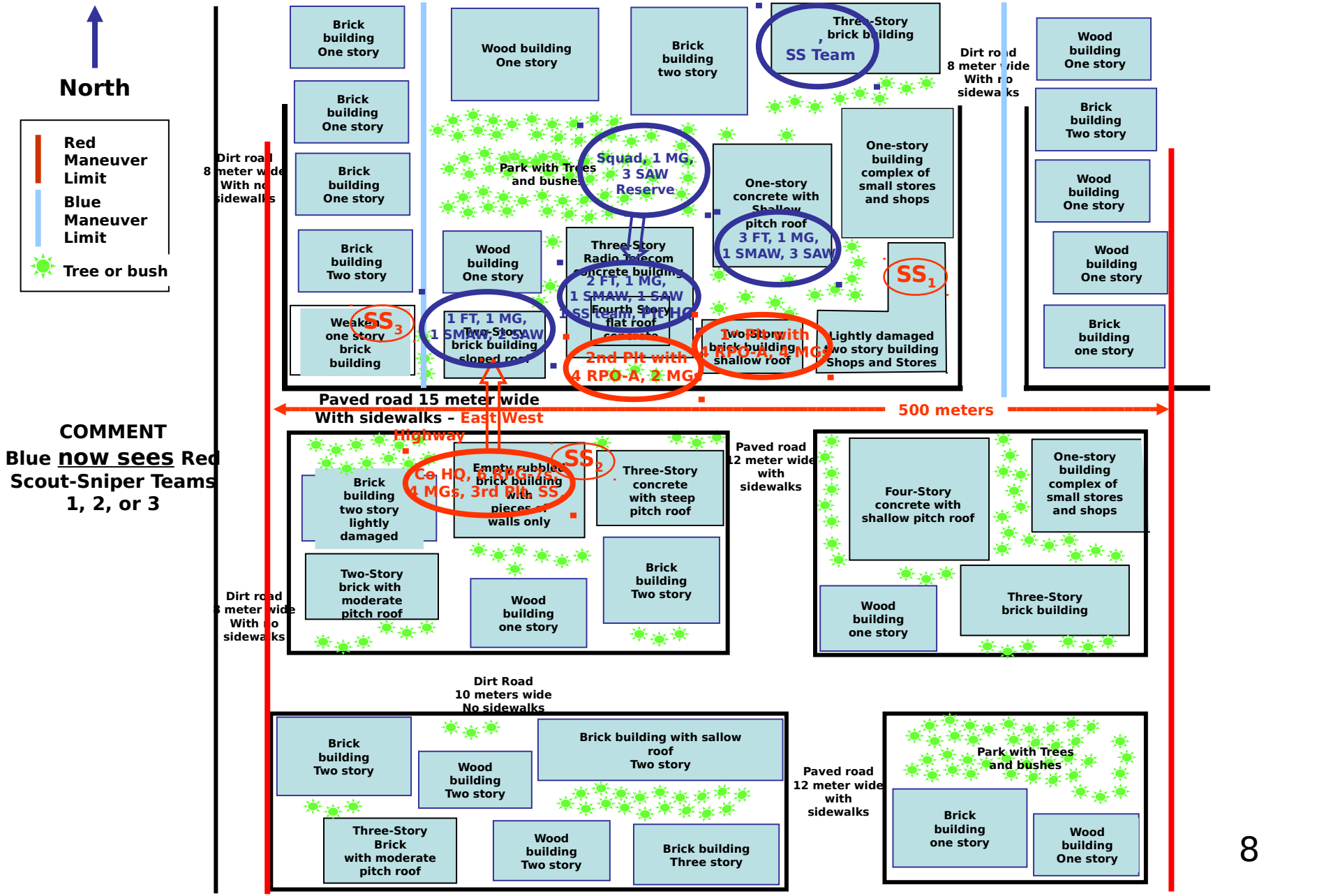
Blue 1st Maneuver To Counter Initial Red Assault


North
Red Maneuver Limit
Blue Maneuver Limit
Tree or bush
COMMENT
Blue does not "see" red Scout-Sniper Teams 1, 2, or 3
Brick building One story
Wood building One story
Brick building two story
Three-Story brick building
SS Team
Dirt road 8 meter wide With no sidewalks
Brick building One story
Brick building One story
Brick building Two story
Wood building One story
Weaken one story brick building
Squad, 1 MG, 3 SAW
Reserve with trees and bushes
Two-Story brick building sloped roof
1 FT, 1 MG, 1 SAW, 2 SAW
Three-Story Radio Telecom concrete building
2 FT, 1 MG, 1 SAW, 1 SAW
Fourth Story flat roof concrete
1SS team, Plt HQ
One-story concrete with Shallow pitch roof
Two-Story brick building shallow roof
1 FT, 1 SAW
One-story building complex of small stores and shops
Lightly damaged two story building Shops and stores
1 FT, MG, 1 SAW, 2 SAW
Wood building One story
Brick building Two story
Wood building One story
Brick building one story
Paved road 15 meter wide
With sidewalks – East West Highway
500 meters
Brick building two story lightly damaged
Two-Story brick with moderate pitch roof
Empty rubbled brick building with pieces of walls only
Co HQ, 3 RPG-7s, 4 MGs, 3rd Plt, SS
Wood building one story
2nd Plt with 4 RPO-A, 2 MGs
Three-Story concrete with steep pitch roof
Brick building Two story
Paved road 12 meter wide with sidewalks
1st Plt with 4 RPO-A, 4 MGs
Four-Story concrete with shallow pitch roof
One-story building complex of small stores and shops
Wood building one story
Three-Story brick building
Dirt Road 10 meters wide No sidewalks
Brick building Two story
Wood building Two story
Brick building with sallow roof Two story
Three-Story Brick with moderate pitch roof
Wood building Two story
Brick building Three story
Paved road 12 meter wide with sidewalks
Park with Trees and bushes
Brick building one story
Wood building One story

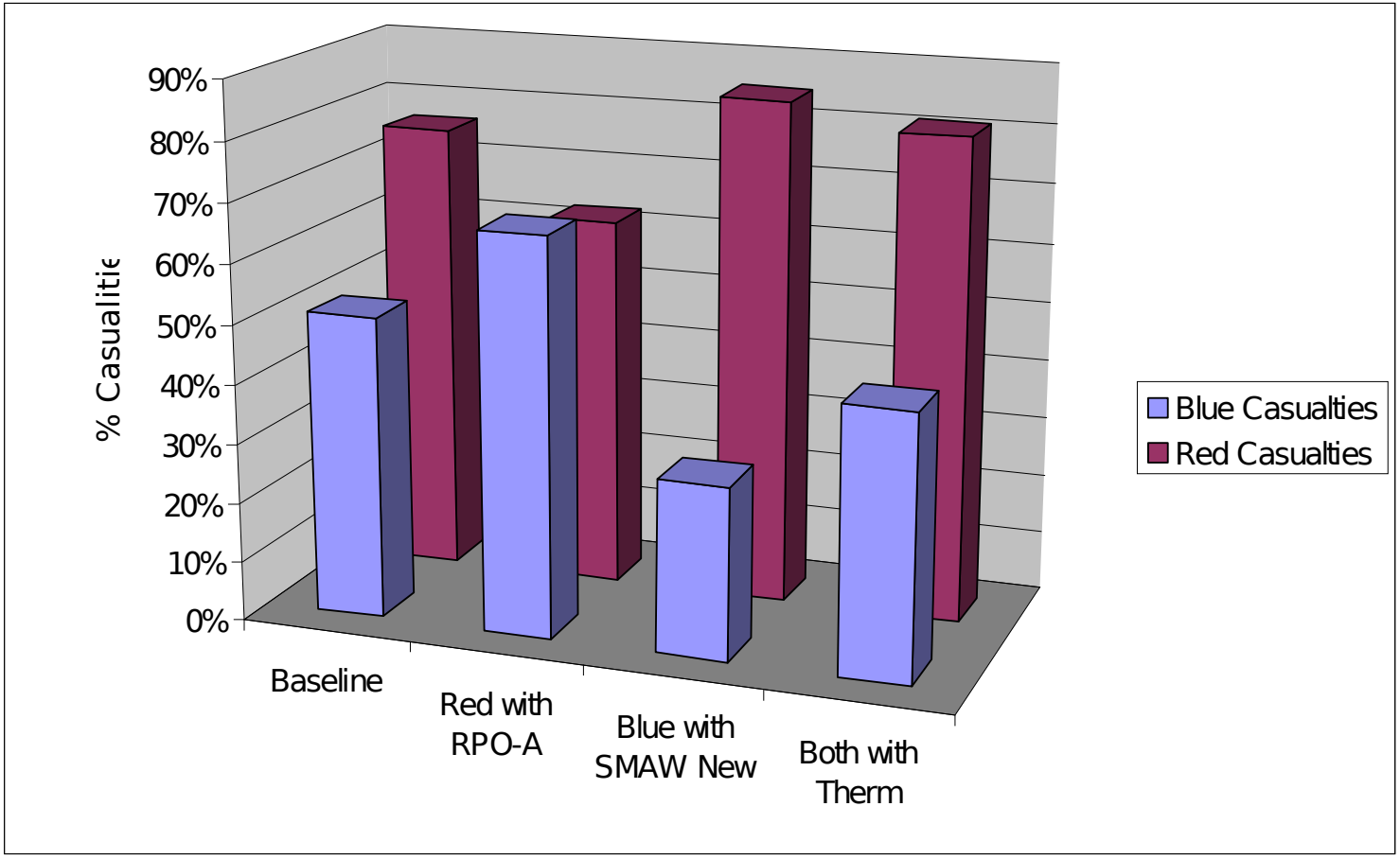
Blue 2nd Maneuver Response to Combined Red Assault


North
Red Maneuver Limit
Blue Maneuver Limit
Tree or bush
COMMENT
Blue does not "see" red Scout-Sniper Teams 1, 2, or 3
Brick building One story
Wood building One story
Brick building two story
Three-story brick building
SS Team
Dirt road 8 meter wide With no sidewalks
Wood building One story
Brick building One story
Brick building Two story
Park with Trees and bushes
Squad, 1 MG, 3 SAW Reserve
One-story concrete with Shallow pitch roof
One-story building complex of small stores and shops
2 FT, 1 MG, 1 SMAW, 2 SAW
Brick building One story
Brick building Two story
Wood building One story
Three-Story Radio Telecom concrete building
2 FT, 1 MG, 1 SMAW, 1 SAW
1 SS Team, Plt HQ
Fourth Story flat roof concrete
Weaken one story brick building
1 FT, 1 MG, 1 SMAW, 2 SAW
Two-Story brick building Shallow roof
1 FT, 1 SAW
Lightly damaged two story building Shops and Stores
Brick building one story
Paved road 15 meter wide With sidewalks – East West Highway
500 meters
Co HQ, 6 RPG-7s, 4 MGs, and the SS
2nd Plt with 4 RPO-A, 2 MG
Paved road 12 meter wide with sidewalks
1st Plt with 4 RPO-A, 4 MG
Brick building two story lightly damaged
Empty rubbled brick building with pieces of walls only
Three Story concrete with steep pitch roof
Four-Story concrete with shallow pitch roof
One-story building complex of small stores and shops
Two-Story brick with moderate pitch roof
Wood building one story
Brick building Two story
Three-Story brick building
Dirt road 8 meter wide With no sidewalks
Dirt Road 10 meters wide No sidewalks
Brick building Two story
Wood building Two story
Brick building with sallow roof Two story
Three-Story Brick with moderate pitch roof
Wood building Two story
Brick building Three story
Paved road 12 meter wide with sidewalks
Park with Trees and bushes
Brick building one story
Wood building One story

Blue 3rd Maneuver to Counter Final Red Assaults

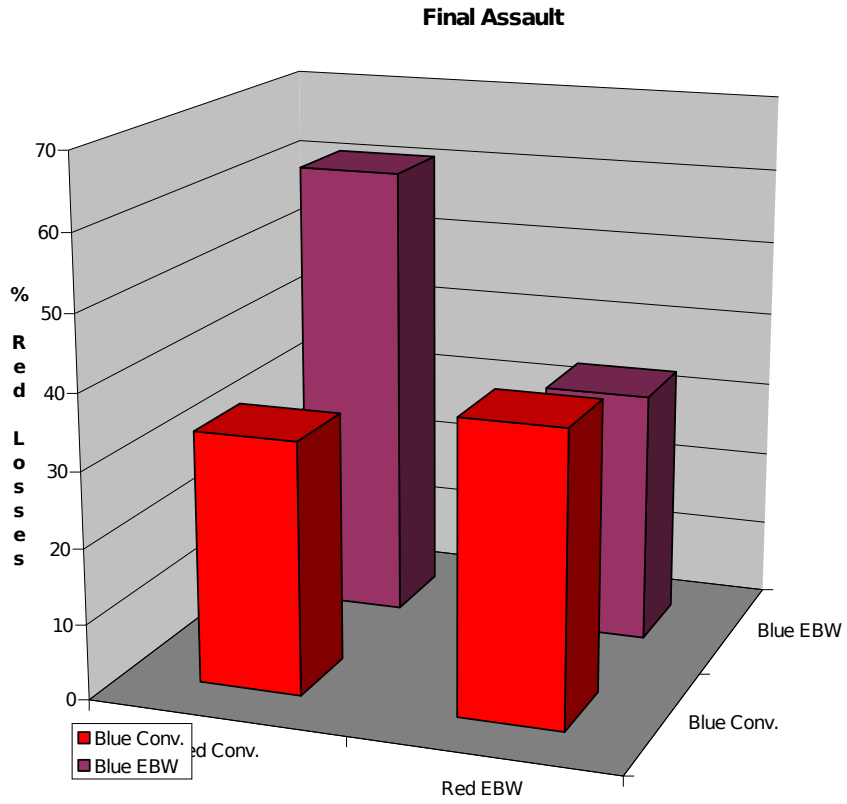

North
Red Maneuver Limit
Blue Maneuver Limit
Tree or bush
COMMENT
Blue now sees Red Scout-Sniper Teams 1, 2, or 3
Brick building One story
Wood building One story
Brick building two story
Three-Story brick building
SS Team
Dirt road 8 meter wide With no sidewalks
Brick building One story
Brick building One story
Brick building Two story
Wood building One story
Park with Trees and bushes
Squad, 1 MG, 3 SAW Reserve
One-story concrete with Shallow pitch roof
3 FT, 1 MG, 1 SMAW, 3 SAW
One-story building complex of small stores and shops
Brick building Two story
Wood building One story
Three-Story Radio Telecom Concrete building
2 FT, 1 MG, 1 SMAW, 1 SAW
Fourth Story flat roof
SS1
SS3
Weaken one story brick building
1 FT, 1 MG, 1 SMAW, 2 SAW
Two-Story brick building sloped roof
2nd Plt with 4 RPO-A, 2 MGs
1st Plt with 4 RPO-A, 2 MGs
Two-Story brick building shallow roof
Lightly damaged two story building Shops and Stores
Wood building One story
Brick building Two story
Wood building One story
Brick building one story
Paved road 15 meter wide With sidewalks – East West Highway
500 meters
Brick building two story lightly damaged
Co HQ, 6 FTs, 2 MGs, 4 MGs, 3rd Plt, SS
SS2
Empty rubble brick building with pieces of walls only
Three-Story concrete with steep pitch roof
Paved road 12 meter wide with sidewalks
Four-Story concrete with shallow pitch roof
One-story building complex of small stores and shops
Two-Story brick with moderate pitch roof
Wood building one story
Brick building Two story
Wood building one story
Three-Story brick building
Dirt Road 10 meters wide No sidewalks
Brick building Two story
Wood building Two story
Brick building with sallow roof Two story
Three-Story Brick with moderate pitch roof
Wood building Two story
Brick building Three story
Paved road 12 meter wide with sidewalks
Park with Trees and bushes
Brick building one story
Wood building One story

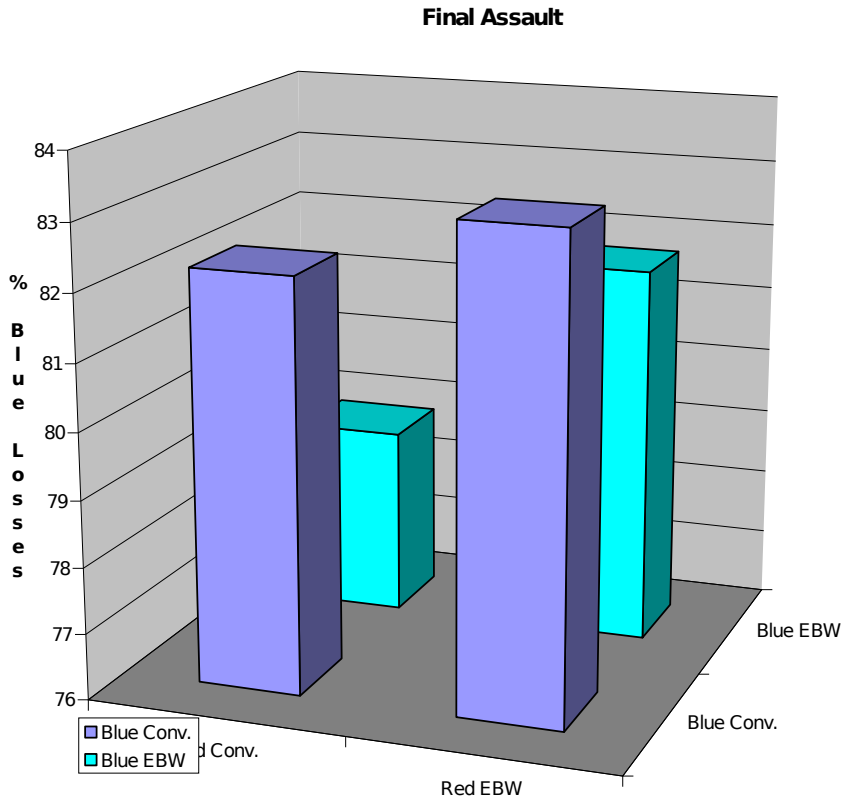
Force Exchange Ratios with and without EBW Pythagoras



Force Exchange Ratios with and without EBW Socrates

Phase III – Final Assault





Item 2

What are our plans to continue?

Future

- Integrate physics-based characterization models of EBWs effects
  - DTRA
  - Thermo baric Hellfire
  - Other S&T efforts

- Enhance Project Albert capabilities
  - 3-D Buildings with interior details
    - Variable EBW penetration
    - Protection vs. Observation dilemma
  - Limit EBW firing to outside of buildings (back blast)
  - Curved streets/alleys
  - Terrain topography
  - Larger units and operations
    - Company level ops
    - 500 total agents
  - Military symbols (agents)
  - Finer detail
    - Adjustable Vulnerability (Socrates)
    - “Surprise”

Future (cont'd)

- Validate Models
  - Historical
  - Experiments
  - Exercises

- Tactical Considerations
  - Integrate Combined Arms
  - Night-time operations
  - Non-combatants

- Integrate or link to high-resolution man-in-the-loop war games
  - CAEn
  - JCATS
  - JANUS

Item 3

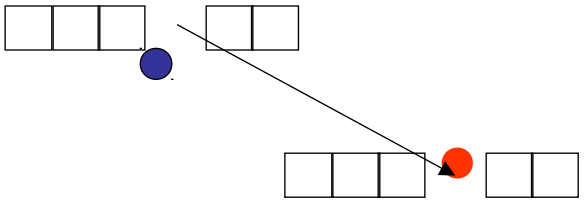
What was our “best” surprise this week?

(Live for surprise)

Surprise

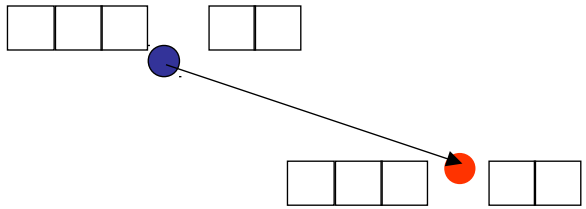
- Socrates graphics are made up of grids
- Grid may be too course for the area being played
- While the agents can move anywhere in the grid, the algorithm defines that their action (sighting, firing) occurs from the center of the grid
- Agent to agent line of sight may not be recognized by the model
- Optimization of the algorithm may overcome this weakness
- Finer grid may enhance output, but with a computational penalty

Original Line of Sight Algorithm



Grid Center to Grid Center

Modified Line of Sight Algorithm



Agent Center to Agent Center

THAT’S ALL FOLKS